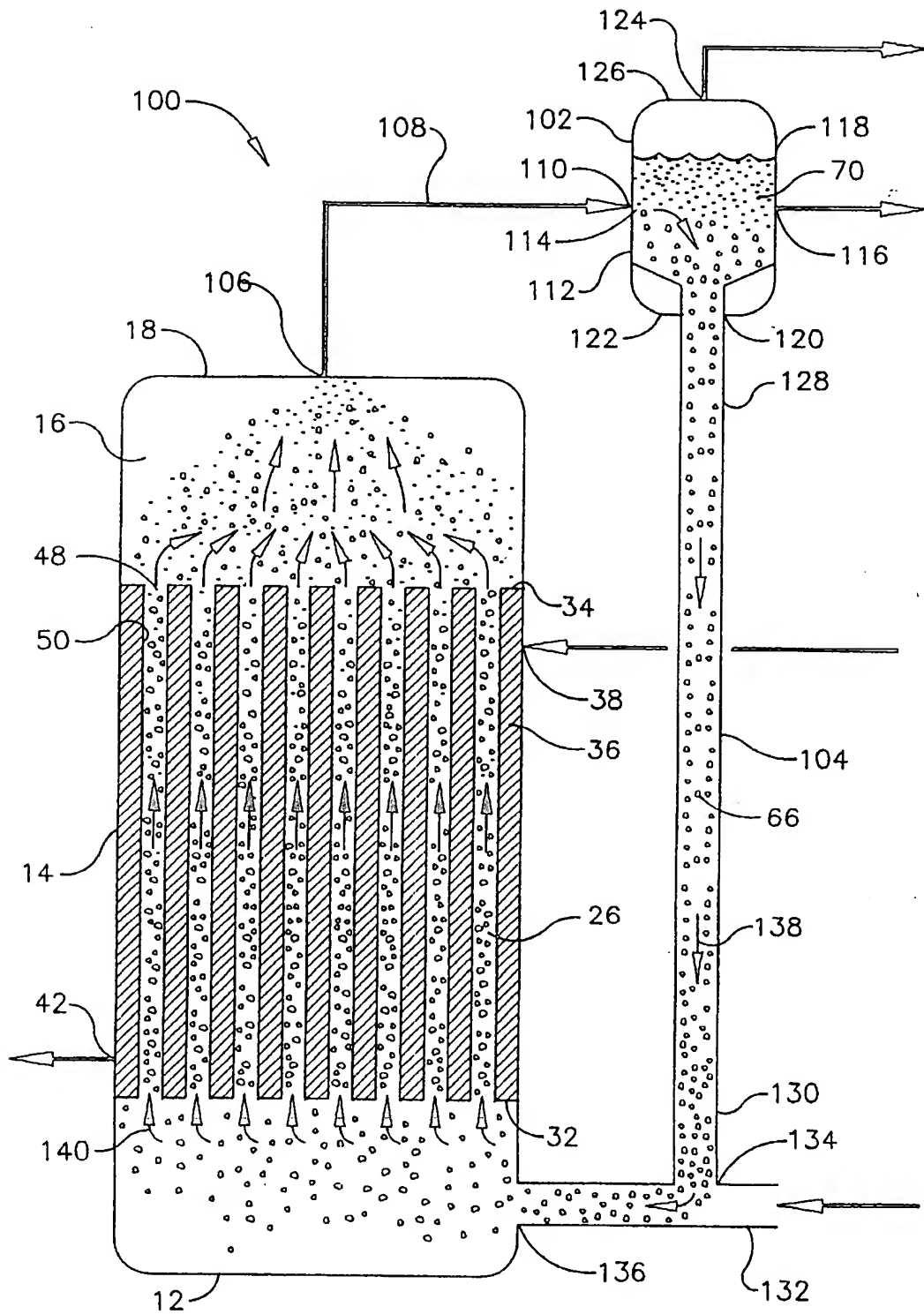
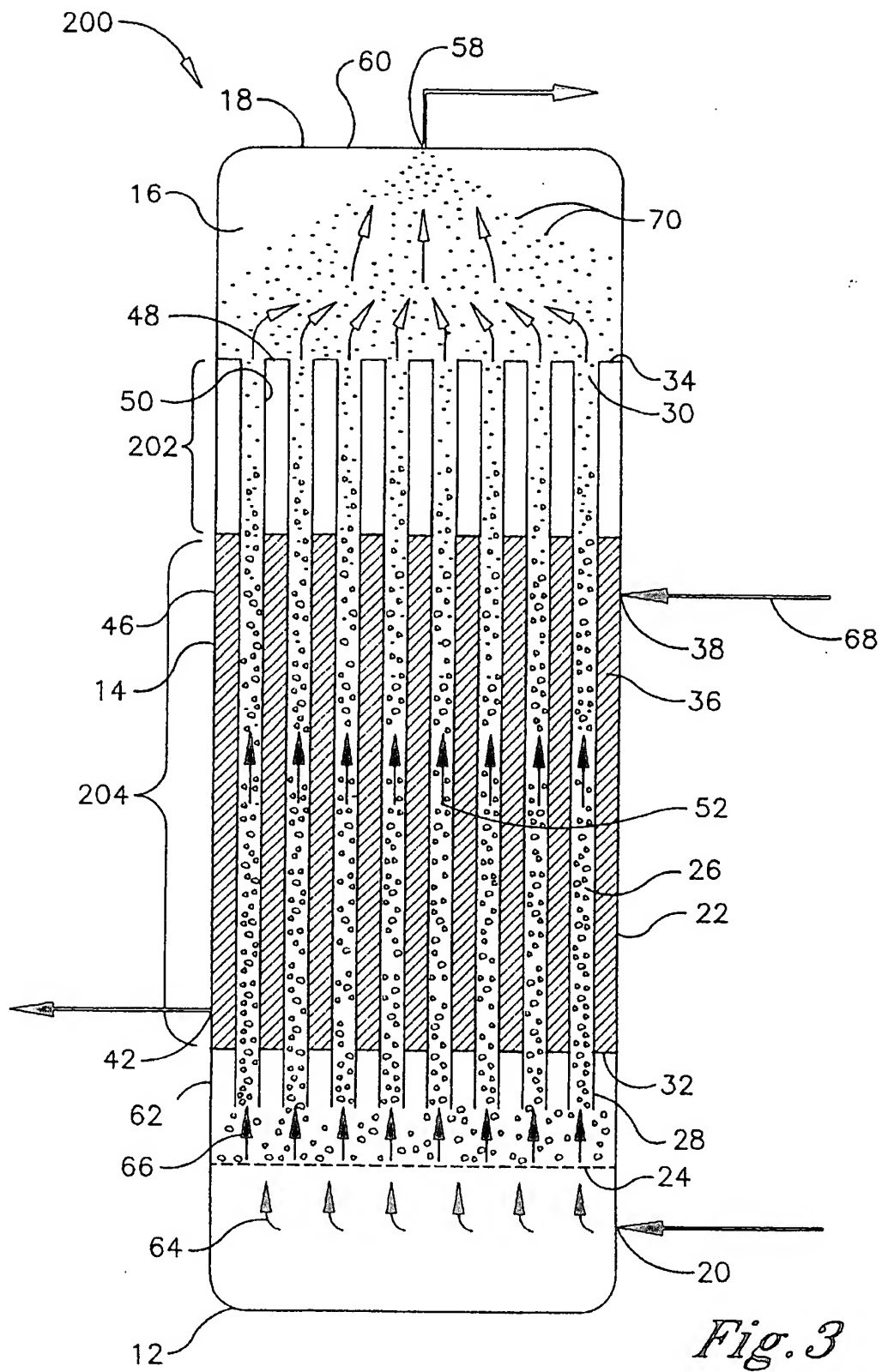


*Fig. 1*

*Fig. 2*





*Fig. 3*

**GLOSSARY OF DRAWING TERMS**  
**Attorney Docket No. 990018 P02**

10 fluidized bed heat exchanger (FBHX)  
12 lower chamber  
14 middle chamber  
16 upper chamber  
18 shell  
20 petroleum liquid feed inlet  
22 vertical side of shell  
24 distributor plate  
26 tubes  
28 lower ends of tubes  
30 upper ends of tubes  
32 lower tube plate  
34 upper tube plate  
36 interstitial space  
38 heat transfer medium inlet  
40 upper portion of middle chamber  
42 heat transfer medium outlet  
44 lower portion of middle chamber  
46 opposite vertical side of shell  
48 tube interiors  
50 tube walls  
52 downcomer  
54 lower end of downcomer  
56 upper end of downcomer  
58 product outlet  
60 top of shell  
62 upper portion of lower chamber  
64 petroleum liquid feed stream arrows  
66 solid particle medium  
68 heat transfer medium arrow  
70 solid hydrate particles  
72 solid particle medium return arrows

100 alternate FBHX  
102 external separator  
104 external downcomer  
106 fluidizable mixture outlet  
108 fluidizable mixture line  
110 separator fluidizable mixture inlet  
112 vertical side of separator  
114 middle portion of separator  
116 product outlet

118 opposite vertical side of separator  
120 solid particle medium outlet  
122 bottom  
124 gas vent  
126 top  
128 upper end of downcomer  
130 lower end of downcomer  
132 petroleum liquid feed line  
134 tee junction  
136 fluidizable mixture inlet  
138 solid particle medium return arrows  
140 fluidizable mixture arrows  
  
200 alternate FBHX  
202 upper portion of tubes  
204 lower portion of tubes